

Occurrence of Alkaloids in Dioscorea¹

DURING the course of screening many plant species for steroidal sapogenins we have also applied to the samples qualitative tests for groups of other constituents, among them alkaloids. In 141 samples of *Dioscorea* tubers native to North, Central, and South America, and to the West Indies, no test for alkaloid was obtained. Of 42 samples native to the rest of the world, 7 contained alkaloid.

A more detailed breakdown of the samples is as follows. Tubers from the Western Hemisphere consisted of 18 identified species and 85 lots of unidentified, many of which would be different species. Those from the rest of the world consisted of 12 identified species and 26 unidentified lots. Abundant alkaloid was found in *D. dregeana* (Transvaal), *D. dumetorum* (Kenya), *D. hispida* (Sumatra), and in three unidentified species (Northern Rhodesia and Transvaal). Some alkaloid was found in *D. elephantipes* (South Africa). Wehmer (Pflanzenstoffe, 1939) mentions three Old World *Dioscoreas* (*alata*, *hirsuta*, and *aculeata*) that contain alkaloids. *D. alata* is a well-known valid species, but the names *D. hirsuta* and *D. aculeata* have been applied to several species so that it is impossible to identify the plants to which he refers. In addition, Henry (Alkaloids, 1949) mentions dioscorine in *D. hispida* (*D. triphylla* var. *reticulata*) from the Philippines and Malay Peninsula.

The qualitative testing procedure consisted in extracting the sample with boiling ethanol (70-80%), evaporating, dissolving in water, and filtering. One portion was acidified and tested with Mayer's reagent. Another portion was tested with silicotungstic acid. A confirmatory test was made by making the extract alkaline, extracting with chloroform, extracting the latter with 1% hydrochloric acid, and again using Mayer's reagent and silicotungstic acid.

The above data are offered as evidence that alkaloids probably do not occur in *Dioscoreas* native to the Western Hemisphere, but that they do occur in some species native to other parts of the world.

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¹ This work was done as part of a cooperative arrangement between the Bureau of Plant Industry, Soils, and Agricultural Engineering, and the Bureau of Agricultural and Industrial Chemistry, U. S. Department of Agriculture, and the National Institutes of Health, Federal Security Administration.